

## New record of *Linophryne coronata* (Lophiiformes, Linophrynidae) from the north-eastern Atlantic Ocean

by

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**RÉSUMÉ.** - Nouveau signalement de *Linophryne coronata* (Lophiiformes, Linophrynidae) dans l'Atlantique nord-est.

Un nouveau signalement du Pêcheur-barbu porte-feu *Linophryne coronata* (Lophiiformes, Linophrynidae) dans l'Atlantique nord-est est décrit à partir d'une femelle portant un mâle parasite, capturée sur le banc de Galice, au nord-ouest de l'Espagne. Cette femelle est caractérisée par un long barbillon mentonnier non branchu et un bulbe lumineux avec un court prolongement médian non ramifié.

**Key words.** - Linophrynidae - *Linophryne coronata* - ANE - Galicia - New record.

The family Linophrynidae is composed of 27 species in five genera that occurs in Atlantic, Indian and Eastern Pacific oceans (McEachran and Fechhelm, 1998). The Genus *Linophryne* Collett, 1886, contains 22 species. Seven species occur in the north-eastern Atlantic (Swinney, 1995), and only three in European waters (Quéro *et al.*, 2003).

### MATERIAL AND METHODS

The specimen was caught by bottom trawl during an exploratory fishery survey carried out by the Instituto Español de Oceanografía on the Galician Bank (NW Spain) (Fig. 1). The Galician Bank is a deep platform situated out of the continental shelf, at about 42°32'N-11°30'W (Division IXb of the Conseil International pour l'Exploration de la Mer, CIEM), with depths ranging from 300 to more than 800 m. Once in the laboratory, meristic and morphometric characters were recorded to the nearest millimetre. The specimen is stored in the fish collection (IIPB148/2004) of the Instituto de Ciencias del Mar de Barcelona.

Barbel length was measured from its base to the tip, and illicium length from its base to the dorsal margin of the esca bulb. The distance between the sphenotic spines was measured between the bases of these spines.

### Material examined

*Linophryne coronata* Parr, 1927 (Fig. 2). - IIPB 148/2004, 223 mm TL, 172 mm SL, with attached parasitic male, 29 mm TL, 16 mm SL; Galician Bank, 30 Jul. 1999, 42°41'90"N-11°46'15"W, 762-764 m depth.

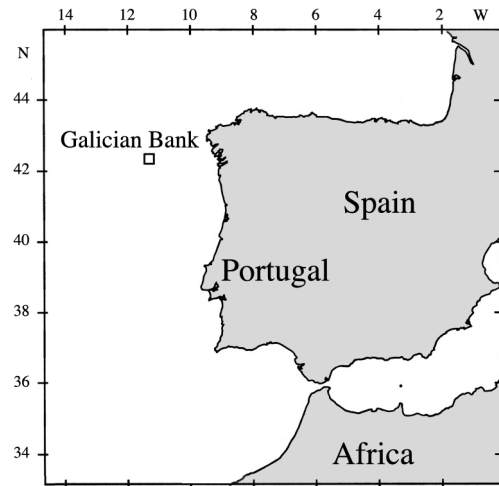


Figure 1. - Map showing the area and station where the specimens (female and its male) of *Linophryne coronata* were captured. [Carte montrant la zone et la station de capture des spécimens (femelle et son mâle) de *Linophryne coronata*.]

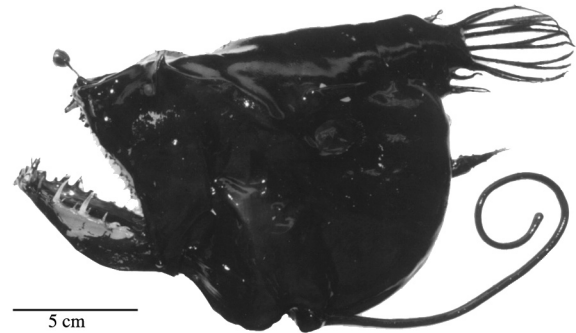


Figure 2. - *Linophryne coronata*, 172 mm SL, with attached parasitic male, 16 mm SL. [Linophryne coronata, 172 mm LS, avec un mâle parasite de 16 mm LS.]

### RESULTS

#### Female diagnosis

D 3; A 3; P 14; C 9; branchiostegal rays 5; upper jaw teeth 28

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(left), 29 (right); lower jaw teeth 13 (left), 14 (right); vomerine teeth 4.

The following measurements are given in millimetres, followed by percentages of standard length within parentheses: total length 223; standard length 172; head length 80 (46.5); preorbital length 39 (22.7); postorbital length 37 (21.5); horizontal eye diameter 4 (2.3); upper jaw length 56 (32.6); lower jaw length 54 (31.4); distance between sphenotic spines 33 (19.2); interorbital length 13 (7.5); predorsal length 154 (89.5); dorsal base length 20 (11.6); pre-anal length 155 (90.1); anal base length 13 (7.5); prebarbel length 120 (69.8); pectoral length 24 (13.9); longest lower jaw tooth length 19 (11); longest upper jaw tooth length 13 (7.6); illicium length 35 (20.3); esca length 10 (5.8); barbel length 220 (127.9); body depth 114 (66.3).

### Female description

Body globose, scaleless; subdermal reticulations on body; sphenotic and preopercular spines well developed; spine present at symphysis of lower jaw; hyoid barbel long, unbranched, pigmented throughout, ending in a rounded tip without filaments; stem of illicium short ending in one ovoid esca bulb with a short medial projection, without appendages; small and large hollow canine teeth disposed in a single row; most of them in series of three, one large between two small or alternating small and large teeth; teeth ending posteriorly in a row of small teeth: four and three straight teeth in the upper jaw (left and right side respectively) and three in the lower jaw, of which the two last curved in the left side and only the last in the right side; largest teeth in lower jaw; anus sinistral, urogenital opening on a small papilla anteriorly with a cuneiform, pointed, protruding rigid papilla posteriorly; colour when fresh uniform black in male and female, brownish after preservation.

### Male diagnosis

D 3; A 3; P 14; C 9; number of olfactory lamellae undetermined.

The following measurements are given in millimetres, followed by percentages in standard length within parentheses: total length, 29; standard length, 16; head length, 6 (37.5); caudal length, 13 (81.2); pectoral fin length, 4 (25); diameter of eye 1, (6.2).

### Male description

Parasitic male attached by separate outgrowths, from the snout and tip of lower jaw, to the belly of the female, positioned about 21 mm in front of and below the anus of the female; body elongate; two blunt sphenotic spines.

### Distribution

Most records of *L. coronata* are from the western Atlantic and from off Iceland, with a single record in the eastern Atlantic and two records from the eastern North Pacific (Bertelsen, 1990).

## DISCUSSION

The presence of well-developed sphenotic and preopercular spines, a short symphyseal spine of the lower jaw, presence of a hyoid barbel and an esca as described above, plus the low dorsal

and anal fin ray counts, without question place this specimen within the genus *Linophryne* (Bertelsen, 1982). Identification to species is more complex and based principally on barbel and esca characters of female specimens. Specimens of this genus are rare in collections and most of the species are known only from one or very few females. There are also metamorphic stages, intraspecific variation and aberrant specimens that contribute greatly to the taxonomic uncertainty.

In the first analysis, we can observe a singular barbel structure, with only a long stem, lacking all accessory structures, such as ramifications, appendages, filaments, and tubercles, all characteristic of various species of *Linophryne*. However, a detailed examination showed that the tip of the barbel has been broken off and the skin healed to make it look normal. In spite of this, the barbel length is well within the known range of *L. coronata* (90-280 % SL), and the stem of the barbel is black and completely smooth, as is also characteristic of this species (Bertelsen, 1982).

The illicium length is also within the recorded range of the species, 19-27% SL (Bertelsen, 1976). The esca is slightly different from the pattern described by Bertelsen (1982), but we consider these differences to be well within the range of variation for members of the genus.

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